



EARTHQUAKE ENGINEERING RESEARCH INSTITUTE NEWSLETTER

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News of the Institute

Soliciting Ideas for Innovative Projects

The charge of the Special Projects and Initiatives (SPI) Committee is to select innovative projects each year for support from EERI's Endowment Fund. This committee is interested in your ideas for new projects. What are the most pressing problems impeding effective earthquake risk reduction? What project would make a significant contribution to reducing earthquake risk? What projects would benefit EERI members?

The SPI Committee is most interested in projects that are unlikely to be funded by one of the more traditional earthquake-related funding agencies. In particular, the committee would like to support one or two projects that are multidisciplinary and innovative.

If you would like to submit an idea, please prepare a one-page pre-proposal using the following format:

- Project title
- Name and contact information of person submitting idea
- Objective and approach
- Product(s) and audience
- Schedule and budget (As the SPI Committee can support up to \$50,000 worth of projects each year, projects with a modest [\$5-10K] budget will be regarded most favorably.)
- Suggested person to chair project committee (Each SPI project has an oversight committee to provide direction and, in some cases, to produce the products.)
- Suggested committee members
- Possible funding sources to leverage Endowment funds

Your one-page pre-proposal can be sent to the EERI office or e-mailed to mgreene@eeri.org. Please send your submissions by MAY 15. If you have questions, feel free to contact SPI Committee members (Ian Buckle, chair; Craig Comartin, Nathan Gould, Marshall Lew, Keith Porter, Charles Scawthorn, Kimberly Shoaf, Susan Tubbesing) or the EERI staff.

Wanted: Papers on EQ Engineering Practice

Last year, EERI's Board of Directors approved the creation of a new category of *Earthquake Spectra* papers entitled "Earthquake Engineering Practice" in order to make the journal more useful to practicing engineers. With the goal of publishing at least one paper in this category in each issue, the editorial board expedited the publication process for such papers. So far, three issues have had articles in this area, on the following subjects: the influence of strong-motion duration on structural damage (August 2006, Hancock and Bommer), performance of Kobe and Northridge welded steel moment-frame buildings (November 2006, Maison et al.), and seismic codes for liquid-containing tanks (February 2007, Jaiswal et al.). The editorial board would like to see more manuscript submissions in this category. For a list of possible topics, see page 1 of the March 2006 *EERI Newsletter*, or visit http://www.eeri.org/cds_publications/spectra/0306-EQS_CALLS.doc.

Earthquake engineering practice papers must be clearly marked as such on the cover letter accompanying the paper. Their usefulness to the practicing engineer will be given priority. Papers should be submitted using the *Spectra* online manuscript submission and peer review system at <http://eqs.peerx-press.org>.

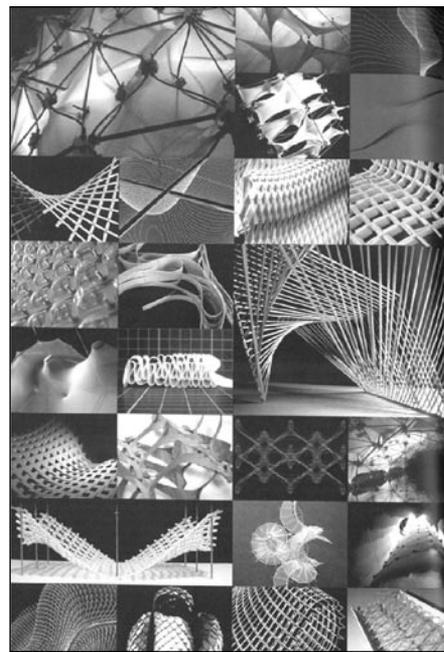
News of the Institute

Elsesser Presents Distinguished Lecture

Eric Elsesser, principal and structural engineer at Forell/Elsesser Engineers, delivered the 2007 Distinguished Lecture, "What's Around the Corner in Seismic Design?" for the first time on February 8 during the 59th EERI Annual Meeting.

Elsesser's lecture included a wide-ranging retrospective on the development of seismic resisting systems and basic multistory steel structural systems that have been commonly used in construction since the 1906 San Francisco earthquake, and how they have performed in subsequent earthquakes. He illustrated their seismic characteristics in terms of drift, cyclic behavior, energy dissipation, and post-earthquake repair cost. He covered dual systems of the last decade—girder welded

moment connection plus damper brace systems—as well as variations of base isolation. He discussed the elements of the seismic design process and showed how new engineering technologies have been adopted into architecture in innovative case histories of his firm's many performance-based projects, including (but not limited to) the Salt Lake City and County Building; the Utah State Capitol Building; the San Francisco Main Library; and the San Francisco, Oakland, and Pasadena city halls. Elsesser ended the lecture with a look at future seismic systems and the challenges presented by the organic, curvilinear, nature-inspired forms being designed in today's cutting-edge architecture. They will require a variety of approaches, including new steel systems, link mechanisms, cable restraint systems, rocking systems, base isolation systems, variable response systems, active control, and smart systems.



What's Around the Corner in Seismic Design?

Groups who wish to invite Elsesser to present the 2007 Distinguished Lecture should contact him at 415/837-0700.

Atkinson Gives Joyner Lecture



Gail M. Atkinson (photo: M. Lew)

At the 59th EERI Annual Meeting, Gail M. Atkinson, professor of geophysics at the University of Western Ontario, Canada, delivered the 2007 Joyner Lecture, entitled "Predicting

Earthquake Ground Motions: Myths and Mysteries." The lecture is given in honor of Bill Joyner for his efforts to bring earthquake seismology and earthquake engineering closer together.

Atkinson explained that ground-motion predictions may be required for a specific fault rupture scenario, or may be needed for a specified probability of occurrence. Specific rupture scenarios usually involve ground-motion simulations, which utilize a range of techniques from deterministic to stochastic. Probabilistic ground-motion estimates are performed within a seismic hazard analysis, in which the prediction takes the form of an equation relating ground-motion amplitude to earthquake magnitude and distance. Within the overall prediction framework, there are a number of "myths" and "mysteries." Atkinson explored three questions in ground-motion mythology: (1) Is there a maximum

earthquake magnitude? (2) Are national seismic hazard maps "conservative"? (3) Can ground-motion distributions be truncated at two (or more) standard deviations? She then presented three mysteries that invite further consideration: (1) Can uncertainty be modeled with a logic-tree analysis? (2) Are deterministic and broadband modeling techniques more accurate or reliable than simpler stochastic simulation techniques? (3) Do felt-intensity data provide quantitative information on earthquake ground motion? It is hoped that acknowledgment and investigation of the myths and mysteries underlying analysis tools will lead to improved ground-motion predictions in the future.

Atkinson will give the lecture again at the April 2007 Annual Meeting of the Seismological Society of America. For more information about her, see page 1 of the January 2007 *Newsletter*.

News of the Institute

2005 *Spectra* Outstanding Paper Award

The *Earthquake Spectra* Editorial Board and the EERI Honors Committee selected the paper entitled "Nonlinear Site Amplification as a Function of 30-m Shear-Wave Velocity," by Yoojoong Choi and Jonathan P. Stewart, for the 2005 *Earthquake Spectra* Outstanding Paper Award. It was published in the February 2005 issue.



(L-R) Jonathan Stewart, *Spectra* editor Farzad Naeim, and Yoojoong Choi (photo: M. Lew).

Reviewers commended the paper for being well researched and well written, as "the authors have carefully described each key aspect of their analysis so that their choices can be easily followed and evaluated." The paper provides useful insights "in the continued evolution of building codes and empirically derived ground-motion attenuation relationships. This is a very valuable contribution. Great job."

Choi is a staff engineer at GeoPentech in Santa Ana, California, and Stewart is associate professor in the Civil and Environmental Engineering Department at the University of California, Los Angeles.

Heritage Prize Awarded to Jerry Podany

At the Annual Meeting, the first annual Heritage Innovation Prize was awarded to Jerry Podany, conservator of antiquities at the Getty Museum in Los Angeles, in recognition of his outstanding contributions to the development and implementation of innovative solutions and policies to preserve heritage structures and related artifacts. The \$1,000 prize is funded through the generosity of EERI Subscribing Member Wiss Janney Elstner Associates, Inc. The prize was conceived by the Heritage and Existing Structures Committee (HESCO) in order to highlight the contributions of individuals and organizations for their creativity, innovation, and leadership in the seismic protection of historical monuments, heritage sites, and cultural artifacts.



The committee hopes the prize will stimulate further creativity and leadership in the field of earthquake risk management towards the protection of irreplaceable resources.

Jerry Podany receives Heritage Prize from Debra Laefer (photo: M. Lew).

Rathje Awarded 2006 Shah Family Prize



Ellen Rathje receives Shah Prize from Past President Craig Comartin (photo: M. Lew)

The Shah Family Innovation Prize Selection Committee awarded the 2006 prize to Ellen M. Rathje, associate professor at the University of Texas at Austin, in recognition of her outstanding research and contributions to professional practice. Her work on the coupled seismic and stick-slip response of potential sliding masses was innovative and insightful, and has been incorporated into guidelines that are used in California for analyzing and mitigating landslide hazards. She has more recently developed an in-situ dynamic liquefaction test that has the potential to change the way in which liquefaction is studied, and she has demonstrated leadership in bringing optical satellite imagery to the earthquake engineering field. She earned a B.S. at Cornell University and M.S. and Ph.D. degrees in civil engineering at the University of California at Berkeley.

Endowed by a generous gift from the Hareh Shah family, the \$10,000 Shah Family Innovation Prize is awarded to younger professionals and academics. For more information, visit http://www.eeri.org/home/honors_shah_innovation.html.

News of the Profession

NEHRP Advisory Committee Named

William Jeffrey, director of the National Institute of Standards and Technology (NIST) in the Department of Commerce, has named 15 distinguished academic, industry, and government experts to serve on the National Earthquake Hazards Reduction Program (NEHRP) Advisory Committee on Earthquake Hazards Reduction (ACEHR).

The responsibilities of the new independent advisory committee include assessing (1) trends and developments, (2) NEHRP's effectiveness and whether it needs revising, and (3) NEHRP's management, coordination, implementation, and activities.

The initial terms for the advisory committee will be staggered, with appointed members listed below serving one, two, or three years, with a possible full three-year

second term. EERI is pleased to note that 12 of the 15 are members of the Institute.

- Walter J. Arabasz, University of Utah, Salt Lake City
- Jonathan D. Bray, University of California, Berkeley
- David E. Cook, Boeing Co., Seattle, Washington
- Lloyd S. Cluff, Pacific Gas and Electric Co., San Francisco, California
- Richard K. Eisner, regional administrator and manager (retired), California Governor's Office of Emergency Services, Oakland
- James R. Harris, J.R. Harris and Co., Denver, Colorado
- Ronald O. Hamburger, Simpson Gumpertz and Heger Inc., San Francisco, California
- Howard Kunreuther, Wharton Risk Management and Decision

- Processes Center, University of Pennsylvania, Philadelphia
- Thomas D. O'Rourke, Cornell University, Ithaca, New York
- Chris D. Poland (chair), Degenkolb Engineers, San Francisco, California
- Paul Somerville, URS Corp., Pasadena, California
- Kathleen J. Tierney, Natural Hazards Research and Applications Information Center, University of Colorado, Boulder
- Anne R. vonWeller, Murray City Corp., Utah
- Yumei Wang, Oregon Department of Geology and Mineral Industries, Portland
- Sharon L. Wood, University of Texas, Austin

The chairperson of the USGS Scientific Earthquake Studies Advisory Committee (SESAC) will serve in an ex officio capacity on the new committee. For more information on NEHRP, including biographical information on the advisory committee members, visit www.nehrp.gov.

High Stakes in California Hazard Plan Update

The California Governor's Office of Emergency Services (OES) is in the process of updating the State Hazard Mitigation Plan (SHMP) approved by FEMA in October 2004. The SHMP is the official statement of California's hazard identification, vulnerability analysis, and hazard mitigation strategy and priorities. The plan must be updated and approved by FEMA every three years, with a 2007 deadline of October 8.

Under the federal Stafford Act, states must adopt SHMPs, and local agencies must have a Local Hazard Mitigation Plan (LHMP) to be eligible for disaster assistance and mitigation funding. Following a disaster, agencies can apply for a variety of hazard mitigation grants for a wide range of actions.

OES intends to submit an "enhanced" version of the SHMP to

qualify California for additional federal hazard mitigation grant funds after future disasters. The stakes are high in preparing an enhanced plan, in contrast with simply updating the current "standard" plan. An enhanced plan would make the state eligible for up to 20% of total authorized Stafford Act assistance after a federally declared disaster. With the current standard plan, California would qualify for substantially lesser amounts; for a \$35 billion authorization, an enhanced SHMP could qualify California for up to \$7 billion, compared to \$2.6 billion under the standard plan.

The updated plan will place added emphasis on hazards such as climate change, levee failure, and tsunamis, in addition to addressing flood, seismic, wildfire, and other hazards. To achieve enhanced status, the plan must demonstrate a strong commit-

ment to hazard mitigation, capability to manage and implement hazard mitigation projects effectively, and integration of local mitigation planning with statewide efforts.

The current plan can be viewed at <http://hazardmitigation.oes.ca.gov/>. Comments may be offered directly at http://hazardmitigation.oes.ca.gov/comment_on_shmp.

A revised draft SHMP will be posted on the web site by early summer 2007, and comments will be invited. OES is conducting outreach to organizations in the public and private sectors. OES has contracted with California State Polytechnic University at San Luis Obispo (Cal Poly) to provide mitigation planning knowledge, writing, outreach, and coordination in the update process. Comments or questions may be directed to Project Director Ken Topping, kentopping@aol.com, or Charles Eadie at hs-charlie@pacbell.net.

News of the Institute

Endowment Fund Donors

EERI would like to thank the donors to the Endowment Fund shown below and acknowledge their recent contributions. EERI's Endowment supports those innovative projects that ensure the Institute's continuing leadership in the earthquake engineering professions.

\$1,100	Other Amounts
Lloyd S. Cluff	Ross Esfandiari
\$100	Andrew Mole
Julio Kuroiwa	Sarah Nathe
	Chuck R. Real

Logging on to Spectra Online

To find instructions to access *EQ Spectra Online* (if you've never registered or have forgotten what to do), visit http://www.eeri.org/cds_publications/spectra_about.html.

Publications

CSSC Reviews PEER

The California Seismic Safety Commission (CSSC) completed its review of the Pacific Earthquake Engineering Research (PEER) Center on March 8. In October 2007, the National Science Foundation (NSF) will cease funding PEER and MCEER. CSSC is recommending to the governor and legislature that "both the state of California and the private sector continue to fund PEER at twice the state's current financial support of PEER's core program to offset the pending loss of NSF funding. And, because of the large amount of public works bonds in the state, the Commission also recommends that the state designate a reasonable percentage of future bonds for research in all applicable disciplines to ensure that funds are invested wisely and in the

most cost-effective manner."

For a free download of the entire report, visit http://www.seismic.ca.gov/pub/PEER_Review_Years_7-9.pdf.

FEMA Publications

FEMA has released two publications that are accessible online. *Techniques for the Seismic Rehabilitation of Existing Buildings* at www.fema.gov/library/viewRecord.do?id=2393 describes common seismic rehabilitation techniques for standard building types in FEMA seismic publications.

The Seismic Rehabilitation Cost Estimator is a new online program at <http://www.fema.gov/srce/index.jsp>. It calculates cost estimates for the seismic rehabilitation of buildings.

Other NEHRP publications are available at <http://nehrp.gov/info/index.html>.

News of the Membership

Trifunac Award

The annual Trifunac Award of the Indian Society of Earthquake Technology has been given to EERI member **David M. Boore**, a geophysicist with the U.S. Geological Survey. He is an internationally acclaimed authority on strong earthquake ground-motion characterization and data processing. Boore's approach to site characterization for seismic hazard analysis has been influential in most seismic design codes. His method is used all over the world in seismic hazard analysis.

Boore is a fellow of the American Geophysical Union, an honorary life member of the Seismological Society of America, and a recipient of the Distinguished Service Award, the highest award given by the U.S. Department of Interior to its employees.

Job Openings

NEES Dep. Exec. Dir.

NEES Consortium, Inc., (NEESinc) is seeking a Deputy Executive Director (DEX) for its Davis, California, headquarters. The DEX provides strategic support to the Executive Director with stakeholder communications, program marketing, and the coordination and advancement of Consortium-wide policies and initiatives. The DEX works closely with the NEESinc management team to spearhead complex initiatives meeting the high-priority needs of NSF and the NEES Board.

Candidates are sought with leadership qualifications, a strong vision and commitment to the advancement of earthquake engineering, and broad involvement and recognition within an engineering profession. Visit http://www.nees.org/About_NEES/jobListings/ for application and position information. The application deadline is April 20, 2007. NEESinc is an Equal Opportunity Employer.

Research Engineer

The University of Auckland Centre for Earthquake Engineering Research in New Zealand is seeking a Research Engineer (A169-07E), for a fixed term of three years, to direct the development and implementation of its Mobile Field Laboratory (MFL), with no teaching commitments. The MFL operates within the framework of the NZNEES@Auckland digital platform (<http://www.nznees.auckland.ac.nz/>). The appointee will be responsible for site supervision of doctoral students. Required: a doctorate in engineering, a strong background in structural dynamics and control, and knowledge of wireless data acquisition equipment and advanced digital networks. The application deadline is April 2, 2007. For more information, visit <http://www.vacancies.auckland.ac.nz/positiondetail.asp?p=4935>.

Call for Abstracts

Bridge Conference

The two-day James E. Roberts Memorial California Bridge Symposium will be held the week of September 17, and will include a track on deep foundations in memory of Ben C. Gerwick Jr. There will also be classes and tours for a total of five days of optional activities. Possible topics include seismic design, light-weight and normal concrete bridges, segmental concrete bridges, steel bridges, orthotropic bridges, bridge foundations, case histories on California bridges, and historical retrospective work. Abstracts are due by May 14, 2007. For more information, contact Alfred Mangus, director for ASCE Sacramento Section, at 916/205-1962, e-mail mangusalf@aol.com.

Risk and Hazards Symposium

A call for papers has been issued for the 4th Annual Canadian Risk and Hazards Network (CRHNet) Symposium to be held November 6-8, 2007, in Vancouver, British Columbia, Canada. This year's symposium focuses on the theme of "Forging Partnerships for Disaster-Resilient Communities." Abstracts are due March 31 and may be submitted for individual oral presentations, organized sessions, panels, or posters. For more information and abstract submission, visit <http://www.jjbc.ca/crhnnet/papers/papers.htm>.

IACMAG Conference

The 12th Conference of the International Association for Computer Methods and Advances in Geomechanics will be held in Goa, India, October 1-6, 2008, hosted by the Indian Institute of Technology, Bombay. A call for abstracts (deadline April 30, 2007) has been posted at www.12iacmag.com. The theme is "Geomechanics in the Emerging Social and Technological Age."

Announcements

PBD Seminar

EERI Subscribing Member Computers & Structures, Inc., (CSI) of Berkeley, California, is presenting a day-long seminar on "Performance-Based Design (PBD) using Nonlinear Analysis" in New York City on May 4, 2007. The instructor is Graham H. Powell, professor emeritus of civil engineering at the University of California, Berkeley. The seminar will emphasize the use of CSI's PERFORM 3D® software and will provide an overview of the process and detailed information on practical applications for frame and shear wall structures. The early-bird registration fee is \$595 until April 6; thereafter, \$695. To register (deadline April 27) and for more information, visit <http://csiberkeley.com/Powell/NYC/>.

Structures Congress

The Structural Engineering Institute of ASCE and the Structural Engineers Association of Southern California are hosting the 2007 Structures Congress, May 16-19, in Long Beach. The congress will feature nine concurrent tracks of technical sessions. Attendees can take advantage of four pre-congress seminars: Seismic Provisions of ASCE 7-05, Sustainable Structures, Wind Load Provisions of ASCE 7-05, and ATC-20 Postearthquake Building Safety Evaluation training. For technical program information, to view the session matrix, to register, or to book a hotel room, visit www.structurescongress.org.

AISC Steel Sabbatical

The American Institute of Steel Construction (AISC) seeks nominations (deadline April 6) to fill the 2007 Steel Sabbatical position, which will enable the selected candidate to share knowledge around the country in daily exchanges with engineers and others involved in the design and construction of steel buildings.

The selected candidate will also help develop the next AISC Specification and Steel Construction Manual. The Steel Sabbatical is a paid position that will be structured to suit the specific situation of the selected candidate. For more information and to nominate a candidate, contact Charlie Carter, AISC's chief structural engineer, at 312/670-5414 or e-mail carter@aisc.org.

WSSPC Nominations

Since 1996, the Western States Seismic Policy Council (WSSPC) Awards in Excellence have recognized exemplary programs, products, and policies in different areas of earthquake mitigation, preparedness, and response. The awards facilitate the transfer of successful experiences to other organizations. WSSPC is now accepting nominations (deadline May 10) for the 2007 Awards in Excellence. To download an award nomination form and for information about award categories, eligibility, and selection criteria, visit <http://www.wsspc.org/Awards/index.html>. Awards will be presented at the WSSPC Annual Conference in the fourth quarter.

CALENDAR

Items that have appeared previously are severely abbreviated. The issue containing the first appearance, or the most informative, is indicated at the entry's end. Items listed for the first time are shown in **bold**.

APRIL

15-20. 3rd General Assembly of European Geosciences Union, Vienna, Austria. Info: www.copernicus.org/EGU/meeting_overview.html (1/07)

20. Khan Lecture Series, Bethlehem, PA. Info: www.lehigh.edu/frk-series (2/07)

26-27. International Symposium on Seismic Risk Reduction, Bucharest, Romania. Info: <http://cnrrs.utcb>.

ro/issrr2007/issrr2007.html
(12/06)

30-May 2. 2nd International Modal Analysis Conf., Copenhagen, Denmark. Info: www.iomac.dk (10/06)

30-May 4. Short Course on Grouting Fundamentals and Current Practice, Golden, CO. Info: www.mines.edu/outreach/cont_ed/grouting/grouting1.html (1/07)

MAY

4. Performance-Based Design Using Nonlinear Analysis, New York City. See page 6. (4/07)

13-20. Coastal Sediments 07, New Orleans, LA. Info: www.asce.org/conferences/cs07/abstract.cfm (5/06)

14-16. SEE5 on Earthquake Risk Reduction in Developing Countries, Tehran, Iran. Info: www.iiees.ac.ir/SEE5 (7/06)

14-17. Workshop on the Physics of Tsunami Hazard Assessment Methods and Disaster Risk Management, Trieste, Italy. Info: <http://agenda/ictp.it/smr.php?1839> (2/07)

28-31. 10th World Conf. on Seismic Isolation, Energy Dissipation, & Active Vibration Control of Structures, Istanbul, Turkey. Info: www.did-tasi.org/seminar/default.asp (12/06)

JUNE

3-6. 10th North American Masonry Conf., University of Missouri at Rolla. Info: <http://www.masonrysociety.org/NAMC/index.html> (3/06)

4-6. 24th International Bridge Conf., Pittsburgh, PA. Info: www.eswp.com/bridge (11/06)

13-15. COMPDYN 2007 Conf., Rethymno, Crete, Greece. Info: <http://www.eng.ucy.ac.cy/compdyn2007> (8/06)

19-21. NEES Annual Meeting, Snowbird, UT. Info: www.nees.org/About_NEES/Announcements/announcement.php?news_id=41 (9/06, 1/07)

25-27. ENHR Conference on Sus-

tainable Urban Areas, Rotterdam, The Netherlands. Info: www.enhr-2007rotterdam.nl (2/07)

25-28. 4th International Conference on Earthquake Geotechnical Engineering (4ICEGE), Thessaloniki, Greece. Info: www.4icege.org (2/06)

26-29. 9th Canadian Conference on Earthquake Engineering (9CCEE), Ottawa, Canada. Info: www.9ccee.ca (2/06)

JULY

2-13. International Union of Geodesy and Geophysics General Assembly, Perugia, Italy. Info: www.iugg2007perugia.it (3/07)

8-11. 17th World Conference on Disaster Management, Toronto, Ont., Canada. Info: <http://www.wcdm.org/> (11/06)

AUGUST

20-22. 1st International Workshop on Performance, Protection, and Strengthening of Structures under Extreme Loading (Protect 2007), Whistler, BC, Canada. Info: www.civil.ubc.ca/protect2007/ (12/06)

SEPTEMBER

3-7. International Conference on Engineering Education (ICEE-2007), Coimbra, Portugal. Info: www.ineer.org/Events/ICEE2007Info/Welcome.htm (1/07)

17-21. Roberts-Gerwick California Bridge Conference, Sacramento, CA. See page 6. (4/07)

26-29. SEAOC 2007 Convention, Lake Tahoe, CA. Info: www.seaocc.org/2007convention (2/07)

OCTOBER

1-6. 12th IACMAG Conference, Goa, India. See page 6. (4/07)

1-13. Ninth Workshop on Nonlinear Dynamics and Earthquake Prediction, Trieste, Italy. Info: <http://agenda/ictp.it/smr.php?1864> (2/07)

8-11. Modern Trends in Structural Engineering for Seismic Design, Ariel, Israel. Info: ribakov@yosh.ac.il (8/06)

11-13. Deep Foundations Institute 2007 Annual Conf., Colorado Springs, CO. Info: www.dfi.org/conferencedetail.asp?id=80 (12/06)

16-20. 6th Turkish National Conference on EQ Engineering, Istanbul. Info: <http://www.6udmk.org.tr/6UDMK.ENG.DOC> (3/07)

NOVEMBER

6-8. 4th Annual Canadian Risk and Hazards Network (CRHNET) Symposium, Vancouver, BC. See page 6. (4/07)

27-29. 2nd Int'l Conference on Urban Disaster Reduction (ICUDR), Taipei, Taiwan. Info: <http://www.ncdr.nat.gov.tw/2ICUDR> (10/06)

DECEMBER

5-7. 8th Pacific Conference on Earthquake Engineering, Singapore. Info: www.ntu.edu.sg/cee/8PCEE/ (2/07)

2008

FEBRUARY

6-9. EERI Annual Meeting, Astor Crowne Plaza Hotel, French Quarter, New Orleans, LA. (2/07, 3/07)

17-20. 14th Int'l Brick and Block Masonry Conference, Sydney, Australia. Info: <http://www.ibmac.org/> (3/07)

APRIL

22-26. 2008 National Earthquake Conference, Seattle, WA. Info: <http://www.earthquakeconference.org/> (3/07)

MAY

18-22. Geotechnical Earthquake Engineering and Soil Dynamics Conf. IV, Sacramento, CA. Info: www.geesd.org (10/06)

AUGUST

11-16. 6th International Conf. on Case Histories in Geotechnical Engineering (6ICCHGE), Washington, D.C. Info: <http://www.6icchge2008.org> (4/06, 9/06, 2/07)

OCTOBER

12-17. 14th World Conference on EQ Engineering, Beijing, China. Info: www.14wcee.org (12/05)

NEES News

Destructive Testing of Bridge Model

The most challenging destructive bridge model test ever conducted occurred when a 110-ft-long, 15-ft-tall, four-span bridge model was tested to failure on state-of-the-art shake tables at the University of Nevada, Reno, NEES experimental site in the James E. Rogers and Louis Wiener Jr. Large-Scale Structures Laboratory. The hybrid test used three shake tables. Two external hydraulic jacks simulated abutment motions. Principal Investigator M. Saiid Saiidi observed, "Preliminary results and observations indicate that a great deal of useful data have been obtained that will tell us for the first time the interaction among different components of a bridge system subjected to the amplified records of the Northridge, California, earthquake of 1994. We are 'raising the bar' in both structural model studies and dynamic testing... The failure mode and the pattern of column damage were very different from those observed in the past

single-column pier or two-column pier shake table tests. In-plane twisting and abutment impact are believed to be the primary reasons for the difference."

Other research team members included Ian Buckle (NEES experimental site director), laboratory manager Patrick Laplace, faculty members Gokhan Pekcan and Mahmood Zadeh, and lead graduate student Robert Nelson.

Three more bridges will be tested during the next two years. One test, funded by the California Department of Transportation, will simulate an earthquake fault crossing under the bridge. The other two, part of the current NSF-supported NEESR project, will utilize innovative materials such as nickel titanium and fiber-reinforced polymers in the bridge. In the next few months, Nevada re-



Testing of 110-ft-long bridge model.

searchers will work with their counterparts from UC Berkeley, UC San Diego, Florida International University, Stanford, Georgia Tech, the University of Kansas, and the University of Illinois at Chicago to investigate different aspects of bridge and sensor performance. For more information, visit <http://nees.unr.edu/4-spanbridges/>.

NEES@UNR is part of the NSF-supported George E. Brown, Jr., Network for Earthquake Engineering Simulation (NEES).



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